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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,991	08/27/2001	Niranjan Damera-Venkata	HP-10011546	5969

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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

ALAVI, AMIR

ART UNIT PAPER NUMBER

2621

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/940,991

Applicant(s)

DAMERA-VENKATA, NIRANJAN

Examiner

Amir Alavi

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-12 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 7 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Claim Rejections - 35 USC § 102**

- The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- Claims 1-6, 8-12 and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bockman et al. (USPN 6,081,344).

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Regarding claim 1, Bockman et al., disclose: Choosing a set of allowed colors (Please note, figure 3, in correlation to column 5, line 6. As indicated a set of RGB colors); processing a color value (Please note, figure 3, in correlation to column 5, line 7. As indicated converting the RGB to CMY color space, in this regard, Examiner considers this color space conversion to correspond to Applicant's processing a color); quantizing said processed color value in a distorted device independent color space according to said set of allowed colors (Please note, figure 3, in correlation to column 5, lines 8-9. As indicated the conversion by utilizing a look-up table, in this regard, Examiner considers the look-up table to correspond to Applicant's quantization); diffusing quantization errors in device dependent color space (Please note, column 6, lines 1-4. As indicated the errors are added and diffused to nearby dot positions); outputting a halftone pixel according to said quantizing step (Please note, column 6, lines 7-9. As indicated the result is a representation of a halftone pattern of color dots which replicate the original RGB image).

Regarding claim 2, Bockman et al., disclose, wherein said distorted color space is CIELAB color space (Please note, column 11, line 23).

Regarding claim 3, Bockman et al., disclose, wherein said output pixel is a CMYK halftone pixel (Please note, column 4, line 61).

Regarding claim 4, Bockman et al., disclose, wherein said set of allowed colors correspond to a given tone of said device dependent color space (Please

note, column 7, lines 12-16, in this regard the look-up table performs the correspondence).

Regarding claim 5, Bockman et al., disclose, wherein said output pixel is a RGB halftone pixel (Please note, column 6, lines 7-9. As indicated the result is a halftone pattern of color dots which replicate the original RGB image).

Regarding claim 6, Bockman et al., disclose, wherein a look up table is used to compute said quantization step (Please note, column 7, lines 14-15. As indicated these look-up tables contain only a subset of the possible 256 tone levels for each color).

Regarding claim 8, Bockman et al., disclose: using the input tone to choose from a set of look-up tables (Please note, column 7, lines 12-21); processing a color value (Please note, figure 3, in correlation to column 5, line 7. As indicated converting the RGB to CMY color space, in this regard, Examiner considers this color space conversion to correspond to Applicant's processing a color); quantizing said processed color value by table look-up using the chosen look-up table (Please note, column 7, lines 14-15. As indicated these look-up tables contain only a subset of the possible 256 tone levels for each color); diffusing quantization errors in device dependent color space (Please note, column 6, lines 1-4. As indicated the errors are added and diffused to nearby dot positions); outputting a halftone pixel according to said quantizing step (Please note, column 6, lines 7-9. As indicated the result is a

representation of a halftone pattern of color dots which replicate the original RGB image).

Regarding claim 9, Bockman et al., disclose, wherein said set of look-up tables corresponds to the tone of said device dependent color space (Please note, column 7, lines 12-16, in this regard the look-up table performs the correspondence).

Regarding claim 10, arguments analogous to those presented for claim 3, are applicable.

Regarding claim 11, arguments analogous to those presented for claim 5, are applicable.

Regarding claims 12 and 14, arguments analogous to those presented for claim 1, are applicable.

Regarding claim 15, arguments analogous to those presented for claim 6, are applicable.

Regarding claim 16, arguments analogous to those presented for claim 2, are applicable.

Regarding claims 17-18, arguments analogous to those presented for claims 3-4, respectively, are applicable.

### **Allowable Subject Matter**

- Claims 7 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
- The following is a statement of reasons for the indication of allowable subject matter: None of the prior art disclose or fairly suggest wherein distorted device independent color space is weighted to discourage luminance fluctuations.

### Other prior art cited

- The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Motta et al. (USPN 5,621,545) is pertinent as teaching image production using color error diffusion).

Shu et al. (USPN 5,838,885) is pertinent as teaching error diffusion type halftoning.

Shin et al. (USPN 6,760,127 B1) is pertinent as teaching multi-level semi-vector error diffusion.

Kawakami et al. (USPN 5,497,180) is pertinent as teaching image recording apparatus for representing a halftone by use of a plurality of recorded dots.

Rombola et al. (USPN 6,552,824 B2) is pertinent as teaching method of processing pixels with binary or multi-bit error diffusion.

Uehara et al. (USPN 6,118,905) is pertinent as teaching image data processing through changing error diffusing technique depending upon kind of images.

Eschbach (USPN 5,565,994) is pertinent as teaching multiple separation error diffusion, with cross separation correlation control for color images.

Mantell et al. (USPN 5,748,785) is pertinent as teaching inter-separation color image processing using error diffusion.

Takahashi et al. (USPN 6,031,974) is pertinent as teaching image processing apparatus and method of manufacturing ink-jet recorded article.



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## Contact Information

- Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Amir Alavi whose telephone number is (703) 306-5913.
- The Examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 6:30 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Leo Boudreau, can be reached at (703) 305-4706.

Any response to this action should be mailed to:

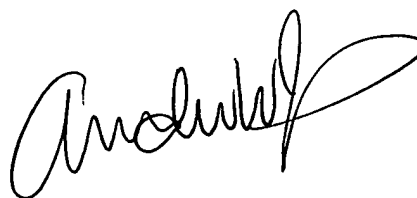
Assistant Commissioner for Patents

Washington, D.C. 20231

**Or faxed to:**

(703) 872-9306, ("draft" or "informal" communications should be clearly labeled to expedite delivery to Examiner)

**Hand delivered responses** should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application should be directed to the T.C. Customer Service Office whose telephone number is (703) 306-0377.



ANDREW W. JOHNS  
PRIMARY EXAMINER

AA  
Group Art Unit 2621  
20 July 2004